

ABSTRACT

The present invention provides adipose-derived stem cells and lattices. In one aspect, the present invention provides a lipo-derived stem cell substantially free of adipocytes and red blood cells and clonal populations of connective tissue stem cells. The cells can be employed, alone or within biologically-compatible compositions, to generate differentiated tissues and structures, both *in vivo* and *in vitro*. Additionally, the cells can be expanded and cultured to produce hormones and to provide conditioned culture media for supporting the growth and expansion of other cell populations. In another aspect, the present invention provides a lipo-derived lattice substantially devoid of cells, which includes extracellular matrix material from adipose tissue. The lattice can be used as a substrate to facilitate the growth and differentiation of cells, whether *in vivo* or *in vitro*, into anlagen or even mature tissues or structures.

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